

REMARKS

In response to the final Official Action of March 08, 2005, claims 1, 17 and 19 have been amended, and claims 16 and 18 have been cancelled.

Referring now to pages 2-9 of the Official Action, it is noted that claims 1-22, 24 and 25 are rejected under 35 U.S.C. §103(a) as unpatentable over WO 99/17330 (*Cooper*), further in view of US Patent No. 5,766,053 (*Cathey et al.*, hereinafter *Cathey*). The Examiner takes the position that claim 1 differs from *Cooper* in that *Cooper* does not disclose a separate back plate, but that *Cathey* is in an analogous art of flat-panel field emission display panel technology and that it shows a back edge of the cathode plate with a flowable connection to a separate back plate 14 isolating a thin gap 36 between the two components. The Examiner then proceeds to state that it would be obvious to a person of ordinary skill in the art at the time of the invention to use a separate back plate and the back side of the cathode plate being carried on the front side of the back plate isolating a thin gap between the cathode plate and the back plate of *Cooper* as taught by *Cathey* for eliminating pressure differential between the sides of the cathode plate and hence reducing structural requirements and eliminating the need for distributed spacers.

Claim 1 has been amended to specifically recite that the cathode plate substrate has first conductive vias provided through the substrate, or at least a front layer thereof, to at least some of the conductive connections in the emission layer for electrical connection to their emitters and gates and further has second conductive vias depending from a back layer of the cathode plate. The second conductive vias cooperate with vias in the front layer of the back plate which are positioned to connect via solder connections with the second conductive vias depending from the back layer of the cathode plate. Support for this amendment is found in the original figures of the present application and in particular Figure 2, showing vias 126 formed in the front layer of the back plate and vias 104 formed in the back layer of the cathode plate. The solder connections between these respective vias is particularly shown in Figure 3 by solder balls 134 and in the original specification at page 6 regarding contact pad 1041 at lines 15-27.

It is respectfully submitted that amended claim 1 should be considered since it clarifies details originally presented in cancelled claims 16 and 18, and therefore no new issues are believed to be raised.

It is correct that *Cathey* shows a cathode plate 16 and a back plate 14 which are separated from each other via a gap 36. The Examiner states that the rear positioning spacers 27 act as a flowable connection. Spacers 27, as noted at column 4, lines 31-37, are used in conjunction with front positioning spacers 26 to mount the cathode plate at the correct position between the back plate 14 and the transparent face plate 12, as seen in Figure 1 of *Cathey*. However, neither *Cathey* nor *Cooper* disclose the specific arrangement of the substrate forming the cathode plate having second conductive vias depending from a back layer of the cathode plate, and further wherein the back plate has vias in a front layer positioned to connect via solder connections with the second conductive vias depending from the back layer of the cathode plate, all of which are now recited in amended claim 1.

Thus, although *Cooper* has vias between layers 1₁, 1₂, 1₃ and 1₄, these layers are bonded together and the vias 17 and 18 provide interconnection between these bonded layers. There is no specific disclosure or suggestion in *Cooper* that the cathode plate has second conductive vias depending from the back layer of a substrate forming the cathode plate, to which vias in the front layer of the back plate are positioned to connect while the back plate and the cathode plate are spaced apart from each other, and wherein the vias connect to each other via a solder connection.

It is therefore respectfully submitted that amended claim 1 is distinguished over *Cooper* in combination with *Cathey*.

In view of the amendment to claim 1, claims 16 and 18 have been cancelled and claim 17 has been made dependent upon amended claim 1 and claim 19 dependent upon claim 17.

In view of amended claims 1, 17 and 19 and the cancellation of claims 16 and 18, it is respectfully submitted that claims 2-15, 17 and 19-25 are also distinguished over the combination of *Cooper* with *Cathey* due to their ultimate dependency from amended claim 1.

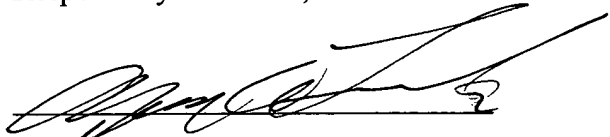
It is noted that claim 23 is allowed over the prior art of record.

In view of the foregoing, it is respectfully submitted that the present application as amended is in condition for allowance, and such action is earnestly solicited. Should there be any fee due with the submission of this amendment, the Commissioner is hereby authorized to charge our deposit account, number 23-0442, for any fee deficiency.

Respectfully submitted,

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